Alg. 2 Warm Up #5-5

1. Find the exponential equation through:
   (2, 1) and (5, 0.125)

2. Condense:

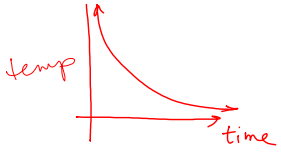
$$\log_3 x - 3\log_3 5$$

3. Expand:

$$\log_2 \frac{8n^3}{(x-2)}$$

HW Questions:

6-130. Kendra just made a cup of hot chocolate that was too hot for her to drink. She set it aside so it could cool off. While she was waiting, her friend Lara called and Kendra forgot about her hot chocolate. Sketch a graph that shows the temperature of the hot chocolate since Kendra first set it aside. How cold will the hot chocolate get?



6-131. Find the equation of the parabola that passes through the points (–2, 24), (3, –1), and (–1, 15).

$y = ax^2 + bx + c$

$(-2, 24) \rightarrow 24 = a(-2)^2 + b(-2) + c$ ① $4a - 2b + c = 24$

$(3, -1) \rightarrow$ ② $9a + 3b + c = -1$

$(-1, 15) \rightarrow$ ③ $a - b + c = 15$

② − ① → $5a + 5b = -25$

$a + b = -5$

① − ③ → $3a - b = 9$

$y = x^2 - 6x + 8$

6-132. Use $f(x) = 3 + \sqrt{2x-1}$ to complete parts (a) through (e) below.

a. What are the domain and range of $f(x)$?

b. What is the inverse of $f(x)$? Call it $g(x)$.

c. What are the domain and range of $g(x)$?

d. Find an expression for $f(g(x))$.

e. Find an expression for $g(f(x))$. What do you notice? Why does this happen?

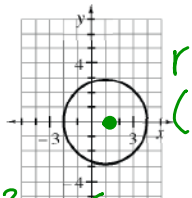
6-133. Solve each of the following equations for x.

a. $x^3 = 243$

b. $3^x = 243$

6-134. Write the equation of each circle graphed below.

a.

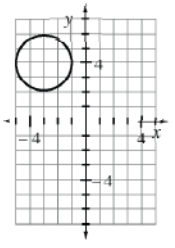


$r = 3$

$(1, 0)$

$(x-h)^2 + (y-k)^2 = r^2$

b.



6-135. Add or subtract each expression below. Be sure to simplify.

a. $\frac{x^2}{x-5} - \frac{25}{x-5}$

b. $\frac{a^2}{a+5} + \frac{10a+25}{a+5}$

c. $\frac{x^2}{x-y} - \frac{2xy-y^2}{x-y}$

d. $\frac{x}{x+1} + \frac{1}{x-1}$

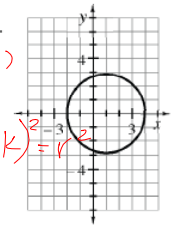
$\frac{x^2 - 2xy + y^2}{(x-y)}$

$\frac{(x-y)^2}{(x-y)}$

$(x-y)$

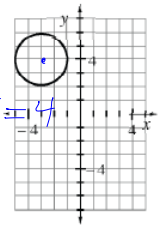
6-134. Write the equation of each circle graphed below.

a.



center (1, 0)
$r = 3$
$(x-h)^2+(y-k)^2=r^2$

b.



$(-3, 4)$
$(x+3)^2+(y-4)^2=4$

6-135. Add or subtract each expression below. Be sure to simplify.

a. $\frac{x^2}{x-5}-\frac{25}{x-5}$

b. $\frac{a^2}{a+5}+\frac{10a+25}{a+5}$

c. $\frac{x^2}{x-y}-\frac{2xy-y^2}{x-y}$

d. $\frac{x}{x+1}+\frac{1}{x-1}$

$\frac{x^2-25}{x-5}$

$\frac{(x-5)(x+5)}{(x-5)}$

$x+5$

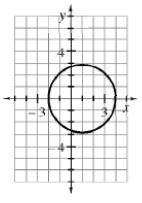
$\frac{a^2+10a+25}{a+5}$

$\frac{(a+5)^2}{a+5}$

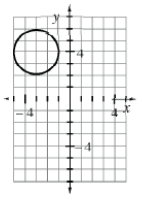
$a+5$

6-134. Write the equation of each circle graphed below.

a.



b.



6-135. Add or subtract each expression below. Be sure to simplify.

a. $\frac{x^2}{x-5}-\frac{25}{x-5}$

b. $\frac{a^2}{a+5}+\frac{10a+25}{a+5}$

c. $\frac{x^2}{x-y}-\frac{2xy-y^2}{x-y}$

d. $\frac{x}{x+1}+\frac{1}{x-1}$

$\frac{x^2-(2xy-y^2)}{x-y}$

$\frac{x^2-2xy+y^2}{x-y}$

$\frac{(x-y)^2}{(x-y)}$

$x-y$

$a^2+2ab+b^2$
$(a+b)^2$

$a^2-2ab+b^2$
$(a-b)^2$

6-136. Find the inverse of each of the functions below. Write your answers in function notation.

a. $p(x) = 3(x^3 + 6)$

b. $k(x) = 3x^3 + 6$

c. $h(x) = \frac{x+1}{x-1}$

d. $j(x) = \frac{2}{3-x}$

$x = \frac{y+1}{y-1}$

$x(y-1) = y+1$

$xy - x = y + 1$

$xy - y = x + 1$

$\frac{y(x-1)}{(x-1)} = \frac{x+1}{x-1}$

Test 6 will include:

Graph a point and equation in 3-D
Solve a system in 3 variables (by hand)
Find the equation of a parabola in standard form given three points
Change forms: log <---> exp.
Graph log using transformations of the parent graph
Write an equation, $y=ab^x$, given 2 points
Find an inverse
Solve an exponential equation
Simplify rational expressions

1) Make the bases match.
2) Take log both sides

Turn in:

Week 5 Classwork

Warm up on top

6 - # 88 ---> 93

6 - # 104 ---> 106

6 - # 108 ---> 111 (with log resource pg)

Blue Classwork

6 - # 123 ---> 125

HW: CI 6-

148 ---> 155

(iso paper for # 148)

Test 6 is Tuesday.